

CLAIMS

I claim:

1. A portable apparatus for eradicating pests from both non-manufactured wood and non-manufactured wood products, said apparatus comprising:

a chamber having a first end, a second end, a left wall, a right wall, a ceiling, a sub-ceiling, a floor, and a sub-floor, the ceiling and sub-ceiling defining a ceiling plenum, and the floor and sub-floor defining a floor plenum, said ceiling plenum and said floor plenum communicating with the interior of the chamber for allowing air to move through the plenums and the interior of the chamber;

a rigid basal structure for supporting said chamber;

a door that allows ingress to and egress from the interior of the chamber, said door positioned at the first end of the chamber;

a means for heating the air in the interior of said chamber, said means of heating communicating with said ceiling plenum and with said floor plenum for moving air heated by said heating means into said chamber and for moving cooler air out of said chamber to be heated by the heating means.

2. The portable apparatus of claim 1 wherein said means for heating comprises a heater and a means for circulating the air within the interior of said chamber.

3. The portable apparatus of claim 2 wherein said heater comprises an indirect fired heating unit.
4. The portable apparatus of claim 2 wherein said heater comprises a direct-fired heating unit.
5. The portable apparatus of claim 2 wherein said heater burns a fossil based fuel (i.e. propane, butane, natural gas, kerosene, diesel fuel, fuel oil etc.).
6. The portable apparatus of claim 2 wherein said heater utilizes an electric heating element.
7. The portable apparatus of claim 2 wherein said means for circulating the air comprises a fan assembly utilizing a fan and electric fan motor.
8. The portable apparatus of claim 7 wherein said fan assembly is a duct axial fan.
9. The portable apparatus of claim 7 wherein said fan assembly is an in-line centrifrigal type.
10. The portable apparatus of claim 7 wherein said fan assembly is a backward inclined.

11. The portable apparatus of claim 1 wherein said floor comprises a plurality of floor sections, each section having a plurality of perforations thus providing a means for air to pass freely between said floor plenum and the interior of said chamber.

12. The portable apparatus of claim 1 wherein said means for heating communicates with said plenums proximate the second end of said chamber, and wherein said sub-ceiling is substantially parallel to said ceiling, said sub-ceiling extending continuously from the second end of the chamber towards the first end leaving an open area proximate said first end so that air may pass between said ceiling plenum and the interior of said chamber.

13. The portable apparatus of claim 12 wherein said sub-ceiling is formed from a sheet material and extends from the second end three-quarters of the length of the chamber so that the open area comprises an area the width of the chamber by one-quarter of the length of the chamber.

14. The portable apparatus of claim 1 further comprising means for loading and unloading the chamber, said loading and unloading means including:

at least one product cart designed to hold the non-manufactured wood and non-manufactured wood products; and

a left rail positioned inside of said left wall and a right rail positioned inside of said right wall, said rails connected to said rigid basal structure substantially parallel to the left and right walls and proximate to the upper part of said basal structure above said floor, said rails extending the length of the chamber and designed to both support and assist with the ingress and egress of the product carts from the chamber.

15. The portable apparatus of claim 14 wherein said product carts have a rigid fabricated structure substantially rectangular in shape and a width slightly less than the width of the chamber, said product carts having a plurality of wheels mounted proximate to the bottom of the structure for riding on said rails.

16. The portable apparatus of claim 15 wherein said loading and unloading means further comprises an external left rail extension that can be removably attached to the left rail and a right rail extension that can be removably attached to the right rail for supporting a product cart outside of said chamber.

17. The portable apparatus of claim 16 wherein said product carts have a slot means proximate to the center and substantially parallel with the underside of said product cart thus providing a means for a lifting machine (i.e., forklifts) to move product carts on or off of the rail extensions.

18. The portable apparatus of claim 1 wherein said rigid basal structure is substantially a rectangular steel frame.

19. The portable apparatus of claim 18 wherein said rigid basal structure comprises a plurality of support beams substantially parallel to the first and second ends, attached proximate to the bottom of said basal structure thus providing an additional increase in torsional rigidity along with a means of ingress for lifting machines (i.e., forklifts) hence facilitating the portability of the unit.

20. The portable apparatus of claim 1 further comprising a tractor wheel assembly attached to the underside of said basal structure for facilitating the movement and transportation of said chamber.

21. The portable apparatus of claim 20 further comprising means for permanently positioning said chamber at a preferred location.

22. The apparatus of claim 1 wherein said means for heating comprises an inlet for allowing outside air to be heated for make-up air as required to pressurize the interior of the chamber.

23. The portable apparatus of claim 1 wherein said means for heating utilizes steam as a source of heat and transference.

24. A portable apparatus for eradicating pests from both non-manufactured wood and non-manufactured wood products, said apparatus comprising:

a chamber having a first end, a second end, a left wall, a right wall, a ceiling, a sub-ceiling, a perforated floor, and a sub-floor, the ceiling and sub-ceiling defining a ceiling plenum, and the floor and sub-floor defining a floor plenum, said ceiling plenum and said floor plenum communicating with the interior of the chamber for allowing air to move through the plenums and the interior of the chamber;

a rigid basal structure for supporting said chamber;

a door that allows ingress to and egress from the interior of the chamber, said door positioned at the first end of the chamber;

a heater compartment attached to and located immediately adjacent to the second end of the chamber;

a heater located in the heater compartment, the heater having the capacity to heat the air in the interior of said chamber to a desired temperature for a desired period of time, the heater having an inlet and an outlet, the outlet of said heater connected to said floor plenum;

means for circulating air having an inlet and an outlet, said circulating air means located in the heater compartment, the outlet of said circulating air means connected to the inlet of said heater, and the inlet of said circulating air means connected to said ceiling plenum; and

control means for controlling the operation of said heater and said air circulating means so that when the desired temperature and time period are entered into the control means the heater and air circulating means working together draw air from the chamber into said ceiling plenum and eventually into said air circulating means, said drawn air is then pushed into said heater where it is heated to a predetermined temperature, the heated air then being directed into the floor plenum through the perforated floor and into the chamber, said control means ensuring that the air circulating means and heater operate at least intermittently for the desired period of time in order to keep the wood products within the chamber at the desired temperature.

25. The portable apparatus of claim 24 wherein said heater comprises an indirect fired heating unit.

26. The portable apparatus of claim 24 wherein said heater comprises a direct-fired heating unit.

27. The portable apparatus of claim 26 wherein said means for circulating air comprises a fan assembly utilizing a fan and an electric fan motor.

28. The portable apparatus of claim 27 wherein said floor comprises a plurality of floor sections, each section having a plurality of perforations thus providing a means for air to pass freely between said floor plenum and the interior of said chamber.

29. The portable apparatus of claim 28 wherein said sub-ceiling is formed from a sheet substantially parallel to said ceiling, said sub-ceiling extending continuously from the second end of the chamber three-quarters of the way towards the first end of the chamber leaving an open area proximate said first end, said open area having the width of the chamber and one-quarter of the length of the chamber so that air may pass between said ceiling plenum and the interior of said chamber.

30. The portable apparatus of claim 29 further comprising means for loading and unloading the chamber, said loading and unloading means including:

at least one product cart having wheels and designed to hold the non-manufactured wood and non-manufactured wood products; and

a left rail positioned inside of said left wall and a right rail positioned inside of said right wall, said rails connected to said rigid basal structure substantially parallel to the left and right walls and proximate to the upper part of said basal structure above said floor, said rails extending the length of the chamber and designed to both support and assist with the ingress and egress of the product carts from the chamber.

Express Mail # EU887664484US

Attorney Docket: TOPP-P7.1-US

31. The portable apparatus of claim 30 further comprising a tractor wheel assembly attached to the underside of said basal structure for facilitating the movement and transportation of said chamber.